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of the thorax and abdomen, so as to assist the tidal movement of air outwards and inwards.

I may add that one of Chun's figures (copied in the paper in *Am. Nat.*) correctly represents the spirals of *Eristalis*, giving even the external slits, highly magnified; but he misinterprets the slits, and takes them to be longitudinal ridges on what he supposes are solid threads. I have also pleasure in learning that my young friend, Professor H. T. Fernald of Pennsylvania Agricultural College, after reading my paper in 1884, stained and cut fine sections of *Passulus cornutus* and thus shows the spirals to be a set of hollow grooves enclosing some of the stained hypodermis which secretes and surrounds the tracheæ.

Princeton College, Jan. 21.

LETTERS TO THE EDITOR.

*** Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

On request in advance, one hundred copies of the number containing his communication will be furnished free to any correspondent.

The editor will be glad to publish any queries consonant with the character of the journal.

A Lightning Stroke.

On the 30th of May, 1881, a party of ladies and gentlemen went in an omnibus from Washington to the country seat of a friend (H. C. Metzgerott's), distant nine miles, in Prince George's County, Md.

During the afternoon the party was seated on the spacious veranda of the dwelling, the horses and omnibus standing on the lawn immediately to the front.

Suddenly a few clouds gathered, and, before any rain fell, a severe and sudden clap of thunder startled them. At the same instant a flash or streak of lightning descended and ripped apart the south-west corner of the roof of the frame carriage house standing alone about two hundred feet distant, descended down the sheathing to midway of the west, or end, wall of the carriage house, then at right angles apparently to the centre of the wall where the clap-boarding was ripped and shattered; then struck a brass-tipped pair of shafts standing near the north-west angle, shattering the right-hand shaft about midway, where a strip of iron covered with leather was placed to serve as a stay for the breeching strap; then apparently passed down and out at the floor by the closed door of the carriage house, where it was plainly seen by all the company moving along rapidly in small coils or circles up the road leading to the veranda, to the hoofs of the horses, playing around them with great velocity, and then apparently dissipated, no one could tell where. The horses were greatly agitated, fairly trembled, but did not move; and most of the company on the porch experienced a tingling, stinging sensation, but none were stunned. The sky soon cleared.

J. H.

Washington, D.C., Jan. 25.

Traumatic Hypnotism.

THE case recently stated of a lady thrown into a hypnotic condition by being thrown from a carriage, in which condition she said and did certain things of which the next day she was entirely unconscious, brings to mind a fact that occurred near this place. Two lads of fourteen and sixteen went out to feed the stock. Coming near a young, almost unbroken colt, they leaped on his back. The animal started in a wild run for the barn, and dashing in at a low door struck the two lads violently against the beam that formed the top of the door. The door being very low the blow was not on the heads but the chests of the boys, sweeping them from the colt's back to the frozen ground. The elder lad sat behind his brother, and was thrown heavily to the ground, striking the back of his head, his brother falling upon him. Both lads rose; the elder rubbed his head, looked about, went into the barn and completed his evening tasks in an orderly manner, replying to his brother when addressed. They went to the house, and the lad warmed himself by the stove, went to the table, ate a

lighter supper than usual, and replied intelligently when spoken to; but his eyes were dull and had a dazed, half-conscious look. After supper he sat by the fire for some time, laughing aloud once or twice "at nothing"—than went to bed as usual. The next morning it was found that he knew nothing of any event after the instant of jumping on the colt's back, and seeing it dash off toward the barn. He had not felt the blow, nor been conscious of the fall, or of any subsequent words or acts, until he arose the next morning, but his conduct and appearance had been normal, except the causeless laughter and the dull look of the eyes. In the case of the lady flung from her carriage, she went into a druggist's, asked for water and a clothes-brush to renovate her dress, said she was not injured, needed no help, etc. Thus she said and did things suitable to the conditions of her accident. The lad, on the other hand, continued the course of action which he had begun before his fall, feeding the stock, etc. His acts during the evening were acts of habit, and such as he repeated every evening. Neither the lady nor the lad were dominated by any other mind, nor directed in their motions by any person conscious of, or responsible for, their state, but it seems that by reason of a blow given on the back of the head in each case, both the lady and the lad were in a true hypnotic state, and were subsequently entirely oblivious of all that had occurred while they were in that condition.

JULIA MACNAIR WRIGHT.

Rain-Making by Faith.

SOME of the readers of *Science* doubtless may recall numerous memorable incidents of the administration of the genial, earnest, shrewd, and eccentric President Phinney of Oberlin. Apropos to recent articles on faith-healing and rain-making is a vivid recollection of such an incident.

Some forty years ago, on a cloudless Sabbath morning, the president walked briskly up the chapel,—there had been a distressing drouth,—and began the service with an extremely fervent prayer for rain. The prayer was long, and before it was finished the skies began to darken, and almost before the congregation was dismissed a copious rain began to fall. The suggestive fact in this relation is that President Phinney had been observed during the morning to give very watchful attention to the barometer.

H. CHANDLER.

Buffalo, Jan. 25

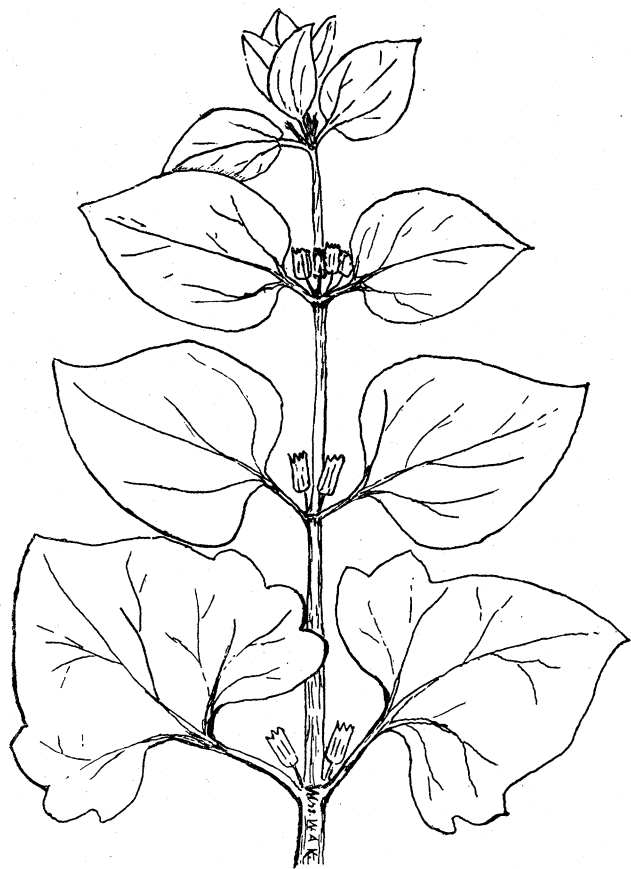
Some Curious Catnip Leaves.

As I passed by an old deserted log cabin, where the soil was poor and barren, I noticed a bunch of catnip in an angle of the pioneer zigzag fence. So close in the corner was it, that it seemed as if it had crept there for protection. But even in its apparent retreat it was conspicuous, for vegetation generally had succumbed to the frosts of early autumn. A society for the prevention of cruelty to plants ought to be organized, I thought, for here was this little stunted-looking bunch of catnip, struggling for existence, when it certainly seemed physically unable to cope with the unfavorable conditions for growth surrounding it. Poor little lonely weed, I mused, is it just that you should struggle here alone against all the hardships which put even the best dowered plants to the test? and like my humane brothers who, in order to end the misery of a poor misused horse, feel compelled to take its life, I terminated its struggles by collecting it.

The catnip (*Nepeta cataria*) has a beautiful leaf, with a rather deeply crenate margin; its upper surface has a rich, soft, downy, rather velvet-like appearance, while the deep green color is a witness of its hardihood. But the leaves on this plant, which out of compassion I magnanimously collected, were very different from the normal type; the surface was nearly smooth, and the margin of many leaves was quite entire; others were crenate only near the base of the leaf, though entire toward the apex, as shown in the accompanying illustration. Why, and wherefore, this difference in the leaves? I queried. Why have they varied from the shape recognized as the typical leaf? The little leaves themselves replied: "We are the result of poor, unfavorable conditions; we had neither strength nor vitality sufficient to

elaborate the modern catnip leaf, though we recognize its superiority over our own shape and appreciate the fact that the most advanced, progressive leaves are those most deeply notched. We are reversions to a more ancient, primitive type of leaf, like those borne by our ancestors. When our environment is such that we are starved, even at the threshold of life, we cannot adorn ourselves with the modern improvements, now so commonly worn." "You will notice," the leaves continued, "that we grew on branches of the summer's seed-stalk. The upper part of it was already dead, but the lower portion had still sufficient vitality to send out these feeble branches; they were only able to follow in the old, old rut, worn by preceding generations, and therefore we are simply what you might with propriety denominate very old-fashioned catnip leaves."

I was much impressed by this explanation, but, even though the leaves themselves had answered my query, like Thomas of old, I still doubted.



NEPETA CATARIA.

Scores and scores of plants were questioned in regard to the cause of this variation from the normal type, and in every case the same story was told. The leaves borne by the branches of the old seed-stalk were often wholly entire, or crenate only towards the base.

All the leaves which grow on the radical shoots are perfected in their crenate outline to the apex; and, while the leaves of the radical shoots are green, even at this season (January), these "old-fashion-leaved" branches have long been frozen and dead.

All things unfold according to their environment, directed by heredity. In geologic times the ancestral hereditary force pushed on the conditions; plants and animals responded by adaptation; or, where they could not adapt themselves to their ever changing environment, they were left behind, and became extinct. The law of evolution says: "Advance with me, or fall from the ranks!" Plants and animals, races, nations and tribes, are yet falling out of rank because they cannot comply with the requirements necessary to endure or cope with the constantly changing conditions.

It took the catnip we know not how long to overstep the entire

leaf; but, after studying the variation of leaves, who can doubt that the present crenate leaf is the result of evolution.

MRS. W. A. KELLERMAN.

Columbus, O., Jan. 18.

AMONG THE PUBLISHERS.

Outing readers will welcome back to its pages the now renowned world traveller and explorer, Thomas H. Stevens, who with his cycle girdled the world for *Outing*, and who has just achieved a successful expedition from the German Ocean to the Black Sea in a steam launch, despite the dangerous rapids of the Iron Gates. *Outing* for February opens with a charming description of "Cycling in Mid-Pacific," by Charles E. Trevathan, in which the author draws a pleasant picture of the natives, foliage, flowers, and the delights of wheeling over the snow-white coral roads of dreamy Tahiti.

—D. Appleton & Co. announce a new book by Arabella B. Buckley, author of "The Fairyland of Science," "Life and Her Children," etc. The title of this work will be "Moral Teachings of Science," which the author is said to have invested with special interest.

—Macmillan & Co. announce for publication early in February a practical work on electric lighting. The full title of the book is "A Guide to Electric Lighting for Householders and Amateurs," and the author is S. R. Bottone, well known by his previous books on electrical subjects. In order to make the book thoroughly serviceable to readers in this country the proofs have been read by an American scientist, for the purpose of supplying any needed explanation of merely local usage.

—Longmans, Green, & Co. have in press a work by the late Ferdinand Praeger, entitled "Wagner as I Knew Him." The book, which is the outcome of Dr. Praeger's life-long intimacy with Wagner, is a remarkably clear, sympathetic, and unprejudiced history of the man and the composer, especially valuable for its frank discussion of episodes in his life usually treated with hesitation by his biographers. Dr. Praeger had the privilege of reading Wagner's autobiography in manuscript, and thus verifying his own observations by Wagner's own statements.

—The latest publication of Professor Eben N. Horsford concerning the ancient settlements of the Norsemen in the territories of the New England States was published in large quarto size by Damrell & Upham, Boston, and bears the title, "The Landfall of Leif Erikson, A.D. 1000, and the Site of his Houses in Vineland, 1892." Leif's houses are placed on the Charles River, below the Fort Norumbega, and a short distance above Boston, Mass. The book is very profusely illustrated with photographic views and with the maps which have come down to us from the earliest explorers of the sixteenth century, and so on to the end of the nineteenth. This collection alone makes of the volume a thesaurus of cartographic information surpassed by no other recent publication. The amount of historic and topographic information gathered from all the earlier historians and other authorities on New England matters is enormous, and they are classed under appropriate headings, of which the principal are as follows: The Landfall, Expedition of Bjarni, Thorwald's Expedition to Vineland, and Sketch of the Thorfinn Expedition to Vineland. Then come a résumé, an appendix, and notes. This volume of 147 large quarto pages is printed with wide margins, holds 39 maps and illustrations, the typographic execution being of the most splendid. Simultaneously with the above was issued a pamphlet in a smaller quarto size, also provided with maps of the New England coast, entitled, "Sketch of the Norse Discovery of America at the Festival of the Scandinavian Societies, assembled May 18, 1891, in Boston, on the Occasion of presenting a Testimonial to Eben Norton Horsford in Recognition of the finding of the Landfall of Leif Erikson, the Site of his Vineland Home and of the Ancient Norse City of Norumbega, in Massachusetts, in the Forty-third Degree."

—The literature of South American ethnology has just been enriched by a fine pictorial publication in folio, being Nos. 1 and 2 of the second volume of the "Veröffentlichungen," issued from time to time by the direction of the Royal Museum of Ethnography